Endorsed Training Provider®

Power Generation

Power Training

- Generator Set Application and Installation Fundamentals Course

Develop your knowledge of Diesel Generating Sets the most effective way by beginning with the basics. Obtain an understanding of Diesel Generating Sets and an awareness of the considerations for their installation by attending this course at Cummins Power Generation's facility in Kent, UK.

Who Should Attend

This course is for all those engaged in specifying and selecting diesel generators and other personnel requiring general diesel generating set familiarization, specifically in the areas of standby power and generator set selection.

Company Overview

Cummins Power Generation is the world's only provider of pre-integrated commercial power systems - from standby/emergency systems to multi-megawatt utility peaking facilities to sophisticated cogeneration applications. Cummins is the only power system supplier to manufacture all the components in a power system - the engines, alternators, transfer switches, switchgear and controls.

Presenters include Richard Meadows, Clive Kennedy and Bob Patrick, veterans of the generator set industry, each with over 30 years application and installation experience with diesel generator set systems.

Course Overview and Objectives

This course has been designed for individuals who need to increase their awareness of diesel generating sets for standby and prime power running applications. Typically for consulting, contracting and application, or specifying engineers in need of updating or refreshing their knowledge. However, it also provides an excellent introduction for individuals who have not been involved with specifying diesel generating sets.

The course provides attendees with a general understanding of the basic generating set system and its component parts. The course is intended to provide a broad based familiarization of generators, sizing and specifying them and their installation and operation and maintenance.

Participants may submit questions, in advance, on engineering and operation issues faced in their jobs. Attendees' understanding of the course will be assessed through a question and answer session at the end of the course.

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Upon successful completion of the course, attendees will be able to:

- Locate and identify all major components of a diesel generating set
- Describe the function and purpose of these components
- Describe in general terms the principal considerations when installing a diesel generator set system
- Understand the ratings of diesel generating set systems and which to use for standby power systems
- Describe the different types of electrical loads and generator sizing considerations for each type

Course Highlights

An Overview of Cummins Power Generation Products
A review of the world's largest manufacturer of diesel engines for industrial applications and the full range of products offered across the world.

The Mechanical Fundamentals of Generator Set Installation I
A review of the mechanical aspects of generator installation do's and don'ts, including location, cooling system, fuel system, ventilation, exhaust system, vibration, noise attenuation.

The Electrical Fundamentals of Generator Set Installation II
A review of the electrical aspects of generator installation do's and don'ts, Control, Protection of engine and alternator, the alternator design, voltage regulation and engine governing and the mains failure standby operation, earthing, grounding and electrical connections.

PowerCommand® Controls and Digital Paralleling
An introduction to the fundamentals of generator controls. An in-depth discussion of low voltage alternator overcurrent protection, including fault current regulation and other advantages of PowerCommand® Control AmpSentry overcurrent protection. Digital Paralleling and comparison to conventional analogue paralleling controls to help understand the physics of paralleling and the benefits of this latest controls technology.

Understanding Generator Set Ratings
A discussion of the types of loads that can cause problems when transferred between energized sources and the solutions available. A review of non-linear loads and a discussion of the impact on the operation of on-site generator sets. Recommendations for sizing and specifications where significant non-linear loads, such as VFDs or UPS, are powered by the generator.

Generator Set Selection Tools GENSIZE® tool
A worked example of our generator set sizing tool to aid designers select the correct generator based on the various load types and performance requirements.

A Guide to Exhaust Emissions
An in-depth discussion on the fundamental components of exhaust gas emissions, treatment of exhaust gas emissions and world-wide exhaust gas legislation.

A Guide to Sound Levels and Sound Attenuation
An in-depth discussion on the fundamentals of sound attenuation and techniques for generator set sound attenuation design, along with some practical do's and don'ts when designing sound attenuation systems for generator set installations.

Factory Tour
A guided tour of our 260,000 square metre, ISO 9001, production facility producing some of the largest high speed diesel generators in the world.